

TELEPHONE MOUNTED CALCULATOR

This patent application is a continuation-in-part patent application of co-pending United States patent application, Ser. No. 508,768, filed Sept. 24, 1974, now U.S. Pat. No. 4,002,855.

The present invention relates in general to a telephone mounted calculator, and it more particularly relates to a calculator which is adapted to be attached to and used with a push button telephone.

With the advent of sophisticated electronic circuits, electronic calculators are becoming increasingly more popular and are usually either the hand-held type or the desk type. Such calculators are used both in the home and for business purposes. When such calculators are either used in the home or for business purposes, the hand-held calculator is generally small in size and thus may be misplaced or lost, or it may not be readily located when it is desired to be used. While the desk-type calculator does not suffer from these same problems, the desk-type calculator does occupy valuable space on a desk, which space could otherwise be utilized for other purposes. Therefore, it would be highly desirable to have a small electronic calculator which can be attached to and used with a telephone which might already occupy space on a desk. Such a calculator would then not occupy any additional valuable space on a desk, and it would always be readily located. In addition, such a calculator could also be attached to a wall-mounted telephone, and therefore be readily available when needed.

Therefore, the principal object of the present invention is to provide a new and improved telephone mounted calculator for push button telephones, which calculator could be readily attached to the telephone and used in connection therewith.

Briefly, the above and further objects of the present invention are realized by providing a calculator having a first set of finger discs mounted on a cup-shaped housing having an opened mouth adapted to fit over an array of telephone push buttons, the first array of finger disc being adapted to actuate the telephone push buttons. Logic circuits are mounted within the housing for performing mathematical calculations, and the results of those calculations are displayed on a display device mounted on the housing and connected electrically to the logic circuits. A first set of switches respond to the finger discs for causing the generation of input information for the logic circuits, and a second array of finger discs bearing calculating indicia thereon cause the actuation of a second set of switches for causing additional input information to be generated for the logic circuits. The first array of finger discs serve as an enlarger to facilitate the location and manipulation of the telephone push buttons, thereby minimizing dialing errors. The first array of finger discs also serve to provide input information, such as input digits for calculations, for the logic circuits.

The above and further objects will best be understood by reference to the accompanying description and the drawings, wherein:

FIG. 1 is a pictorial view of the calculator mounted on a conventional push button telephone, the calculator being constructed in accordance with the present invention;

FIG. 2 is an enlarged top plan view of the calculator of FIG. 1;

FIG. 3 is a cross-sectional view of the calculator of FIG. 2 taken substantially along the line 3—3 thereof;

FIG. 4 is a cross-sectional compound view of the calculator of FIG. 2, taken substantially along the line 4—4 thereof;

FIG. 5 is a cross-sectional view of the calculator of FIG. 2 taken substantially along the line 5—5 thereof; and

FIG. 6 is a bottom enlarged plan view of the calculator of FIG. 1, showing the calculator apart from a telephone.

Referring now to the drawings, and more particularly to FIG. 1 thereof, there is shown a calculator 10, which is constructed in accordance with the principles of the present invention, and which is mounted on a telephone 12 having an array of push buttons 14 (shown in broken lines in FIG. 2). The attachment 10 generally comprises a cup-shaped housing 16 having an array of finger discs generally indicated at 18 projecting from a face plate 20 of the housing 16. The array of finger discs 18 are slidably mounted on the housing 16 and are adapted to actuate corresponding ones of the array 14 of the push buttons for the telephone 12. The finger discs of the array 18 are arranged in rows and columns, and the discs in a given row are arranged further apart than the telephone push buttons of the array 14 to generally facilitate accurate manipulation of the array of push buttons 18, whereby the chances of actuating wrong telephone push buttons of the array 14 is greatly reduced. Moreover, the finger discs of the array 18 are somewhat larger in size than the corresponding telephone push buttons of the array 14 so as to facilitate greatly the actuation of the corresponding array of telephone push buttons. As best seen in FIG. 2 of the drawings, the finger discs, such as the disc 22, bear on their front faces large numerical indicia, such as the numerical indicia indicated at 24 on the front face of the finger disc 22, whereby the user can more readily and conveniently see the numerical indicia on the array 18 as compared to the numerical indicia normally found on the front face of the telephone push buttons.

In accordance with the present invention, there is provided as best seen in FIG. 6 of the drawings, logic circuits generally indicated at 25 for performing mathematical calculations, such as arithmetic functions commonly performed by calculators, and as best seen in FIGS. 1 and 2 of the drawings, a display device 26 for providing a digital read out of information concerning the calculations performed by the logic circuits 25. A second set of smaller discs, such as the disc 27 as best seen in FIG. 2, also project from the face plate 20 of the housing 18 for generating input signals to the logic circuits for providing function information, such as a multiplication indication to the logic circuits 25 as hereinafter described in greater detail. A set of switches, such as the switch generally indicated at 28 actuated by the disc 22 for actuating a telephone push button as best seen in FIG. 4, are employed to generate digital calculating information to the logic circuits 25. An on-off power switch 29 is also activated by the user to control the operation of the logic circuits 25.

As best seen in FIG. 4 of the drawings, a series of links or legs, such as the leg 30, interconnect the finger discs with corresponding ones of the telephone push buttons, such as the interconnection by the leg 30 between the finger disc 22 and the corresponding telephone push button 31. Some of the legs, such as the leg 30, include a transversely extending offset portion 32 to